

REMARKS

A petition for two-month extension of time has today been filed as a separate paper and a copy is attached hereto.

The objections to the specification and drawing are respectfully traversed. While it is true, as the examiner notes, that in the embodiment of Fig. 2, spring 26 is attached to the bladder, as described in paragraph [0030] of the specification. However, claims 11 and 19 are not directed to the embodiment of Fig. 2. Rather, claims 11 and 19 are directed to the embodiment of Fig. 3 which shows spring 38 surrounding and external to the shut-off valve. See the discussion in paragraph [0031] of applicant's specification.

The examiner will note that claim 1 has been amended to incorporate the limitation of claim 6, now cancelled. Accordingly, claim 1 represents claim 6 rewritten in independent form and the rejection for anticipation by Mercier, as applied to claim 6, is respectfully traversed. The examiner's rejection is predicated on the assumption that Mylar, which may be used to form the bladder 27 of Mercier (column 2, lines 32-36 of Mercier), "is known to be a material of a thin metal layer attached to a plastic film," quoting from page 3 of the office action. It is respectfully submitted that the examiner is incorrect in this respect. The Mercier patent teaches that "Mylar" is a trade name for a type of polyurethane marketed by Dupont.

On the other hand, the chemical literature defines "Mylar" as a trademark for a

“polyester film.” See the attached definitions from *Hawley’s Condensed Chemical Dictionary* (Attachment No. 1), Dupont registration numbers 559948 (Attachment No. 2), 625875 (Attachment No. 3), 616473 (Attachment No. 4), and 616652 (Attachment No. 5). Thus, while “Mylar” was originally developed by Dupont to serve as a substrate to support a thin metal reflective layer, i.e., the balloon of the Echo Satellite launched in 1960 (see Attachment No. 6), Mylar, per se, is not a metal film.

The rejection of claims 1, 3, 5-8, 12, 17 and 25 for obviousness over Drumm in view of Weber and Taylor is also traversed. At page 5 of the most recent office action, the examiner writes:

“It would have been obvious to one skilled in the art to modify the accumulator in Drumm by providing a second port and valve for the control of the amount of gas in the system as such would allow for more control over the function of the accumulator and make it better to accommodate different situations and a wider range of uses as suggested by Weber . . .”

The devices of Drumm and Weber are simply pressure accumulators wherein liquid enters and exits a single chamber through a single port. On the other hand, Taylor (Webb) is not intended to function as a pressure accumulator. Rather, Taylor is directed toward a storage tank for “extremely reactive chemicals” (column 2, line 2), especially rocket propellant (column 2, lines 24-29). Toward this end, Taylor provides a conduit 25 for delivery and supply of the stored liquid to and from the tank, i.e., to and from the interior of the bladder (column 3, lines 17-37), a conduit 27 to allow for escape of air from the bladder as it is filled with liquid (column 3, lines 28-32) and a conduit 16 for supply of “pressure” for the purpose of expelling the liquid contained within the bladder (column 3, lines 14-17 and 24-26). Thus, while all of Drumm, Weber and Taylor supply pressure to the exterior of a bellows (Drumm and Weber) or a bladder (Taylor), Drumm and Weber do so for a purpose unrelated to the purpose of Taylor. The purpose of Taylor is discharge from storage within a tank of a reactive chemical, especially rocket propellant. The only purpose suggested by Taylor for provision of a port or ports in communication with the interior of bladder 20 is storage and supply of the reactive chemical or propellant. Neither Drumm nor Weber supplies liquid from one chamber responsive to supply of pressure to a second chamber. In Drumm and Weber the single chamber within the interior of the bellows stores nothing that can be received and discharged in the manner of Taylor. To modify Drumm to allow for receipt and discharge of a liquid as in Taylor, would change the operative principle of Drumm. “If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious” quoting from MPEP 2143.01

and citing In re Ratti, 123 U.S.P.Q. 349 (CCPA 1959).

At page 5 of the Office Action, the Examiner states that the motivation would be to “allow or promote control over the function of the accumulator.”

In both Drumm and Weber a bellows expands and contracts linearly along the same axis on which a valve member, controlled by the bellows, reciprocates. In other words, in both Drumm and Weber the bellows is designed to operate a valve, i.e. element 7 in Drumm and element 2 in Weber. In contrast, in Taylor (Webb) expansion and contraction of the bladder is not coaxial with any valve member and, moreover, is not linear or coaxial with any inlet or outlet fixture. There is no suggestion in any reference of record that a bladder would be a desirable replacement for the bellows of Drumm or even a practical replacement for the bellows of Drumm.

At page 6 of the Office Action the Examiner writes:

“It would have been obvious to one skilled in the art to modify the bladder in Drumm to be formed as a non-bellows bag provided with a metal and plastic layer as such as a known equivalent type of bladder used in accumulators as suggested by Taylor where such would provide for cheaper and simpler bladder to that of the accordion pleated metal only bladder of Drumm.”

Firstly, as is noted above, the storage tank of Taylor is not an accumulator in the sense that Taylor and Weber are accumulators. In both Drumm and Weber, pressure is introduced and withdrawn against a fluid within a closed space so that it is pressure which is accumulated. Again, Taylor is directed toward a storage tank and is not intended to provide the pressure accumulating function of Drumm or Weber. Thus, for the Examiner to characterize the bladder of Taylor as “a known equivalent type of bladder used in accumulators” is unsupported by the objective evidence of record. Likewise, there is no objective evidence of record to the effect that motivation would be

found in provision of “a cheaper and simpler bladder.” The motivation for combining references “must be based on objective evidence of record,” quoting from In re Lee, 61 U.S.P.Q.2d 1430, at 1433 (Fed. Cir. 2002).

At page 11 of the Office Action the Examiner writes:

“Taylor teaches that metal bags can be non-pleated in accumulator structures, and Taylor sets forth the use of such for diaphragms in pressure responsive systems which is what the bag in Drumm is the equivalent of.”

As noted above, Taylor is not intended to serve as a pressure accumulator. The Examiner’s fashioning of a generic term, i.e. “pressure responsive systems,” as allegedly descriptive of both Taylor and Drumm, is not a factual basis supporting the premise that the prior art suggests the desirability of substitution of the bladder of Taylor for the non-equivalent bellows of Drumm.

The rejection of claim 3 over Mercier in view of Weber is respectfully traversed in view of the fact that claim 3 depends from claim 1 and further in view of the fact that claim 1 defines the bladder as formed of a metal foil, a structure which is not suggested by the combined teachings of Mercier and Weber.

The rejection of claims 14, 16, and 18 for obviousness over Drumm in view of Weber, Taylor and Miller is respectfully traversed for the reasons that Taylor is not properly combinable with Drumm and Weber, as explained above.

Regarding the thickness of the metal foil recited by amended claim 14, (see cancelled claim 10) the Examiner writes:

“The use of any thickness of metal is considered an obvious choice of mechanical expedients where one skilled in the art would only need routine experimentation to arrive at optimum values....”.

Whatever merit such argument may have had at one time, the current case law rejects the notion that allegations of obvious “design choice” and/or “routine experimentation” are sufficient basis for establishing a *prima facie* case for obviousness. See, for example, In re Yates, 211 U.S.P.Q. 1149 (CCPA 1981) and Ex parte Peterson, 228 U.S.P.Q. 216 (Bd. Pat. App. & Int. 1985). Moreover, the Examiner’s argument ignores Applicants’ teaching of the importance of the thickness of the metal foil in the context of their invention. See paragraph [0018] at page 6 of Applicants’ specification.

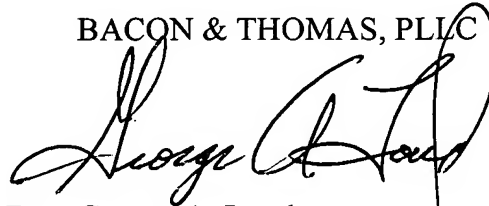
The rejection of claims 14, 16, 18 and 26 for obviousness over Mercier in view of Miller is respectfully traversed because Mercier modified to include the vent of Miller would still lack a bladder formed of a metal foil as required by these claims as amended.

The rejection of claim 21 for obviousness over Mercier in view of Hafner and the rejection of claim 23 for Mercier in view of Miller are respectfully traversed for the reason that the hypothetically modified structure of Mercier would still lack the bladder formed of a metal foil as recited by these claims.

In conclusion, it is respectfully requested that the Examiner reconsider the rejections of record with a view toward allowance of the claims as amended.

Respectfully submitted,

BACON & THOMAS, PLLC

A handwritten signature in black ink, appearing to read "George A. Loud", is written over the printed name and registration number.

By: George A. Loud
Registration No. 25,814

Date: November 15, 2005

BACON & THOMAS, PLLC
625 Slaters Lane, 4th Floor
Alexandria, Virginia 22314
Telephone: (703) 683-0500

Attachment #1
10/021,443

Hawley's Condensed Chemical Dictionary

ELEVENTH EDITION

Revised by

N. Irving Sax
and
Richard J. Lewis, Sr.



VAN NOSTRAND REINHOLD
New York

MUSTARD GAS

mustard gas. Legal label name (Air) for dichlorodimethyl sulfide.

mustard oil, artificial. See allyl isothiocyanate.

mustard oil. Any of several organic compounds having the formula $R-N=C=S$, in which R is an alkyl or aryl radical—NCS an isothiocyanate group. Its best known member is allyl isothiocyanate, the characteristic ingredient of mustard oils.

See also nitrogen mustard.

Hazard: Irritant to mucous membranes.

mutagenic agent. (1) Any of a number of chemical compounds able to induce mutations in DNA and in living cells. The alkyl mustards as well as dimethyl sulfate, diethyl sulfate, and ethylmethane sulfonate, comprise a group of so-called alkylating agents, reacting with the nitrogen atoms of guanine, a constituent of both RNA and DNA. This reaction affects the guanine molecule in such a way as ultimately to induce a mutation in DNA by depurination. Nitrous oxide can deaminate both guanine and cytosine. If DNA having transforming activity is exposed to such deamination conditions, it is slowly deactivated. Nitrous oxide also produces mutants in whole cells, whole bacteriophage, some viruses, and in DNA having transforming ability. (2) Ionizing radiation.

MVE. Abbreviation for methyl vinyl ether. See vinyl methyl ether.

mw. Abbreviation for molecular weight.

"MX."²⁸⁰ TM for fiber-bonded abrasives.

Properties: High tensile strength and resistance to impact and heat shock, unusually resilient. **Use:** For finishing and polishing flutes of taps, drill end mills, reamers, etc.; removing burrs from milling and drilling operations, breaking edges of cast aluminum parts, etc.; cleaning cast iron molds, removing flash from molded plastics.

"Mycoban."²⁹⁹ TM for sodium and calcium preparations. These salts inhibit the growth of many fungi and of some microorganisms, particularly *Bacillus mesentericus*, for commercially significant periods of time.

Use: Inhibit mold and rope in bakery products.

"Mycostatin."¹¹² TM for nystatin.

is a member of the tricothecene group produced by the fusarium fungus. This has been identified in samples of the so-called "yellow rain" in Southeast Asia, where it is said to have been the cause of many deaths among war refugees. Its presence there is subject to some conjecture, since the fusarium fungus cannot germinate in the humid environment of that area. There is substantial evidence (blood tests, autopsies, and contaminated gas masks) that the Soviets have used such lethal agents in Afghanistan also.

myelin. A unique, sheath-like structure which encloses major nerve trunks, somewhat like insulation around a wire. It is comprised of approximately 80% lipid, the balance being made up of proteins, polysaccharides, salts, and water. The lipid fraction is composed of sphingolipids and glycerophosphates, which in turn contain long-chain fatty acids. It has a low concentration of polyunsaturated lipids and high concentration of long-chain sphingolipids. Its composition is essentially constant in different species of animals, and also as between adults and infants. The breakdown of the lipid structure of myelin is a characteristic of multiple sclerosis.

"Mylar."²⁸ TM for a polyester film. Seven available types used for electrical, industrial, and packaging purposes. **Forms:** Roll and sheet.

Mylone. See "Crag" (fungicide).

myoglobin. A protein-iron-porphyrin molecule similar to hemoglobin. The chief difference is that myoglobin complexes one heme group per molecule, whereas hemoglobin complexes four heme groups. See also heme.

myo-inositol. See inositol.

myokinase. An enzyme found in muscle and other tissues that catalyzes the reaction $2ADP \rightleftharpoons ATP + AMP$.

myosin. A protein of molecular weight above 500,000 which is an essential component of muscular tissue and strongly affects its contractile properties.

myrcene. (7-methyl-3-methylene-1,6-octadiene). $C_{10}H_{16}$. A triply unsaturated aliphatic hydrocarbon found in oil of bay, verbena, hops, and nutmeg.

ble in water; soluble in alcohol, chloroform, ether, glacial acetic acid. Combustible. **Use:** Preparation of perfume chemicals, flavoring.

"Myrcene 85."²⁹⁸ TM for a special grade of the triply unsaturated aliphatic hydrocarbon, $C_{10}H_{16}$, 7-methyl-3-methylene-1,6-octadiene. Minimum purity 75%. Balance mainly 1-limonene.

myrcia oil. (bay oil; bayleaf oil). A yellow essential oil, slightly levorotatory. **Use:** Bay rum, fragrances and flavors.

myricyl alcohol. See 1-triacontanol and 1-hentriacontanol.

myricyl palmitate. $C_{30}H_{61} \cdot C_{16}H_{31}O_2$ (approximately). A wax ester found in beeswax.

myristic acid. (tetradecanoic acid).

CAS: 544-63-8. $CH_3(CH_2)_{12}COOH$.

Properties: Oily, white, crystalline solid. Soluble in alcohol and ether, soluble in water, d 0.8739 (80°C), bp 326.2°C, 204.3°C (20 mm), mp 54.4°C, refr index 1.4310 (60°C). Combustible.

Derivation: Fractional distillation of coconut acid and other vegetable oils, occurs in sperm oil. **Grade:** Technical, 99.8%, FCC.

Use: Soaps, cosmetics, synthesis of esters for flavors and perfumes, component of food-grade additives.

myristin. (glyceryl trimyristate).

$C_3H_5(OOCC_{13}H_{27})_3$. A triglyceride occurring, usually to a small extent, in natural fatty oils.

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Properties: Colorless liquid, mp -4°C, found in fat of some seeds and in fish oil.

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Use: Perfumery

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myristyl mercap

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Use: Perfumery

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CAS: 13925-1

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Attachment #2
10/021,443

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Typed Drawing

Word Mark	MYLAR
Goods and Services	IC 017. US 001. G & S: POLYESTER FILM. FIRST USE: 19510621. FIRST USE IN COMMERCE: 19510621
Mark Drawing Code	(1) TYPED DRAWING
Serial Number	71616417
Filing Date	July 13, 1951
Current Filing Basis	1A
Original Filing Basis	1A
Registration Number	0559948
Registration Date	June 10, 1952
Owner	(REGISTRANT) E. I. DU PONT DE NEMOURS AND COMPANY CORPORATION DELAWARE 1007 MARKET STREET WILMINGTON DELAWARE 19898 (LAST LISTED OWNER) DUPONT TEIJIN FILMS US LIMITED PARTNERSHIP BY ASSIGNMENT DELAWARE RT. 141 AND LANCASTER PIKE BARLEY MILL PLAZA- BLDG. 27 WILMINGTON DELAWARE 19805
Assignment Recorded	ASSIGNMENT RECORDED
Type of Mark	TRADEMARK
Register	PRINCIPAL
Affidavit Text	SECT 15. SECTION 8(10-YR) 20020906.
Renewal	3RD RENEWAL 20020906
Live/Dead	LIVE

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Word Mark	MYLAR
Goods and Services	IC 016, US 037, G & S: FLEXIBLE FILM FOR PACKAGING PURPOSES. FIRST USE: 19510621. FIRST USE IN COMMERCE: 19510621
Mark Drawing Code	(1) TYPED DRAWING
Serial Number	71668540
Filing Date	June 21, 1954
Current Filing Basis	1A
Original Filing Basis	1A
Registration Number	0625875
Registration Date	April 24, 1956
Owner	(REGISTRANT) E. I. DU PONT DE NEMOURS AND COMPANY CORPORATION DELAWARE 1007 MARKET ST. WILMINGTON DELAWARE 19898
Assignment Recorded	ASSIGNMENT RECORDED
Attorney of Record	FREDERICK F. ALEXANDER
Prior Registrations	0559948
Type of Mark	TRADEMARK
Register	PRINCIPAL
Affidavit Text	SECT 15.
Renewal	2ND RENEWAL 19960425
Live/Dead Indicator	LIVE



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 (Use the "Back" button of the Internet Browser to return to TESS)**MYLAR**

Word Mark	MYLAR
Goods and Services	IC 017, US 021, G & S: FLEXIBLE FILM FOR ELECTRICAL INSULATION. FIRST USE: 19510621. FIRST USE IN COMMERCE: 19510621
Mark Drawing Code	(5) WORDS, LETTERS, AND/OR NUMBERS IN STYLIZED FORM
Serial Number	71688543
Filing Date	June 21, 1954
Current Filing Basis	1A
Original Filing Basis	1A
Registration Number	0616473
Registration Date	November 22, 1955
Owner	(REGISTRANT) E. I. DU PONT DE NEMOURS AND COMPANY CORPORATION DELAWARE 1007 MARKET STREET WILMINGTON DELAWARE 19898
Assignment Recorded	ASSIGNMENT RECORDED
Attorney of Record	ARNETTA MCRAE
Prior Registrations	0559948
Type of Mark	TRADEMARK

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Affidavit Text SECT 15.
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Services

MYLAR

IC 017. US 001. G & S: FLEXIBLE SYNTHETIC FILM USED AS A BASE FOR ADHESIVE OR PRESSURE SENSITIVE TAPES FOR MARKING, PACKAGING, OR STRAPPING APPLICATIONS; AS A BASE FOR MAGNETIZED SOUND RECORDING, VIDEO, OR CONTROL TAPE; AS A BASE FOR METALLIC YARN; OR AS A BASE FOR SCRIBING MATERIAL USED IN CARTOGRAPHY OR DRAFTING; AND FOR FURTHER MANUFACTURE IN THE INDUSTRIAL ARTS. FIRST USE: 19510621. FIRST USE IN COMMERCE: 19510621

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Mylar

From Wikipedia, the free encyclopedia.

Mylar is a trade name of DuPont Teijin Films of Hopewell, VA, United States, for biaxially-oriented polyethylene terephthalate (BOPET) polyester film used for its high tensile strength, chemical and dimensional stability, transparency, and electrical insulation. A variety of companies manufacture BOPET and other polyester films under different trade names, but Mylar is often employed as a generic designation for these, as in "Mylar capacitor" or "Mylar balloon."

History and manufacture

Mylar was developed by DuPont in the mid-1950s. In 1960, NASA launched the Echo satellite, a 100 foot (30 m) diameter balloon of metallized 0.005 inch (1/8 mm) thick Mylar film.

In manufacture, a film of molten PET is cast on a roll and subsequently stretched in and orthogonal to the direction of travel. One of its sides is microscopically smooth, while the other side contains microscopic asperities which promote adhesion of coatings and printing media.

Mylar can be aluminized by sputtering a thin film of metal onto it. The result is much less permeable to gasses (important in food packaging) and reflects up to 99% of light, including much of the infrared spectrum. Like aluminium foil, aluminized Mylar has a shiny reflective side and a dull side. Mylar does not tear easily, unlike tin foil and aluminum foil. Its reflective properties enable it to be used as a solar viewer — commonly used for viewing events such as solar eclipses, although care must be taken because invisible fissures can form in the aluminum film, reducing its effectiveness in this application.

Uses for Mylar

Common uses for BOPET films include:

- An overlay over a map, on which additional data, or copied data, can be drawn without damaging the map
- Performance sails for sailboats
- Solar sails as an alternative means of propulsion for spacecrafts such as Cosmos 1
- An electrical insulating material
- As base material for magnetic tapes (audio/video tape etc.)
- Insulation for houses and tents in a **cold** environment. A sheet of mylar covers the inner wall of the house or tent, with the shiny surface facing **inward**. This reflects body heat **back into** the house or tent, warming the interior more efficiently.
- Insulation for houses and tents in a **hot** environment. A sheet of mylar covers the outside wall of the house or tent, with the shiny surface facing **outward**. This reflects the sun's heat **away from** the house or tent, cooling the interior more efficiently.
- Mylar emergency blankets are used to reflect a shock victim's body heat back to the patient.
- Mylar solar curtains reflect sunlight and heat away from windows.
- Five layers of mylar in NASA's spacesuits make them radiation resistant and keep astronauts warm.
- Mylar balloons are used for floral arrangements and parties.
- Mylar foil is used as a mirror-like decorative surface on some book covers, T-shirts, and other flexible



Mylar balloons are often used to celebrate significant events.

cloths.

- Mylar foil is, along with other plastic films, used as a dielectric in foil capacitors.
- Very thin Mylar is often used as the diaphragm material in electrostatic loudspeakers.
- Mylar has been used in the production of drumheads since 1958 due to its durability and acoustical properties when stretched over the bearing edge of the drum. They are made in single- and double-ply versions, with each ply being between 2mil and 10mil (1 mil=0.0254 millimeter) in thickness, with a clear or opaque surface.
- Protective covering over buttons/pins/badges.
- As a thin strip to form an airtight seal between the control surfaces and adjacent structure of aircraft, especially sailplanes.

Retrieved from "<http://en.wikipedia.org/wiki/Mylar>"

Categories: Organic polymers

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